POINTS TO CONSIDER

NON TECHNICAL ABSTRACT

While many patients with Hodgkin disease can be cured by chemotherapy and radiotherapy, the outlook for patients who relapse is poor. About half of patients with Hodgkin Disease have the EBV virus in their tumors which may be a target for immunotherapy approaches. We have sucessfully used specialized immune ssytem cells grown in the laboratory and trained to recognize and kill EBV infected cells (EBV-specific cytotoxic T-lymphocytes (CTL)) to prevent and treat another type of cancer called post transplant lymphoma that occurs after bone marrow transplant. In post transplant lymphoma, the tumor cells have 9 proteins made by EBV on their surface. However in Hodgkin disease the tumor cells only express 2 EBV proteins. In a previous study we made EBV specific CTLs that recognized all 9 proteins and gave them to patients with Hodgkin disease. Some patients had a partial response to this therapy but no patients had a complete response. We think one reason may be that many of the T cells reacted with proteins that were not on the tumor cells. In this present study we are trying to find out if we can improve this treatment by growing T cells that only recognize one of the proteins expressed on Hodgkin tumor cells called LMP-2a. These special T cells are called LMP-2a specific CTLs

To make these LMP-2a specific CTLs, we will obtain blood from the patient and first grow a special type of cell called dendritic cells which will stimulate the T cells. We will then transfer an adenovirus vector that carries the LMP-2a gene into the dendritic cells. These dendritic cells will then be treated with radiation so they cannot grow and used to stimulate T cells. This stimulation will train the T cells to kill cells with LMP-2a on their surface. We will then grow these LMP-2a specific CTLs by more stimulation with EBV infected lymphoblastoid cells. To learn how long these T cells last after we have given them, we will mark them with a retroviral vector encoding the neomycin resistance gene. We have successfully and safely used the same approach to track a related type of T lymphocyte given back to other patients.